

AMENDMENTS TO THE SPECIFICATION

Please replace paragraph [0007] with the following amended paragraph:

Verification (1:1 match) to verify whether the claimant[.]; In this case, the system needs just to compare the facial record extracted from the image with that of the claimed person to give the similarity score. The system either accepts the claimant if the similarity score is above an acceptance threshold, or reject if otherwise.

Please replace paragraph [0017] with the following amended paragraph:

Most of existing ~~face~~ faces recognition technologies are based on visible light images. Such technologies have difficulties in adapting to changes in environmental lighting: Changes in lighting cause changes in facial features; therefore, their accuracy deteriorates when the lighting of the face recognition environment differs from that of the face enrollment environment, for example, US Patent US2001/003102A1.

Please replace paragraph [0061] with the following amended paragraph:

In any embodiment of the present invention, whatever type of active lights are used to illuminate the face, the relative position between the active lights and the camera should be relatively fixed, and the angle between the direction of the active lighting and the axis of the camera lens should be in a ~~sharp~~ an acute angle.

Please replace paragraph [0068] with the following amended paragraph:

Refer to Fig. 3 again. Let the angle between the active light direction and the camera axis be θ , environmental light be S_1 and active light be S_2 , then the ~~aforementioned~~ aforementioned equation (1) can be written as

$$I_i = \rho_i(x, y) n_i(x, y)^T \bullet (s_1 + s_2) \quad (3)$$

where $i=1,2,\dots,k$;

If the strength of the active lighting S_1 is much greater than that of the environmental lighting S_2 , i.e. $\|S_1\| \gg \|S_2\|$, then equation (3) can be approximated by:

$$I_i \approx \rho_i(x, y) n_i(x, y)^T \cdot s_1 \quad (4)$$

where $i=1,2,\dots,k$;

Please replace the abstract at page 27 with the following amended abstract:

A method and apparatus for facial image acquisition and/or recognition used for person identification. In infrared face image acquisition, near infrared (NIR) images of a face are captured by an imaging unit with the face illuminated by active NIR lights; an NIR optical filter is used in the imaging unit to minimize visible lights in environments while allowing NIR lights to pass through. NIR face images ~~thus acquired~~ provide ~~[[s]]~~ good image quality for ~~the purpose of~~ face recognition. In face recognition, eyes are localized in NIR face image(s) quickly and accurately by detecting specular highlight reflection in each eye, whereby face is then localized. The invention effectively problems caused by environmental lights, and leads to accurate and fast face recognition under variable lighting conditions. Moreover, the methods use a non-intrusive and user-friendly way of active lighting for face image acquisition and recognition because the NIR lights are in the invisible spectrum.